UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,924	10/22/2001	Clark E. Lubbers	P01-3903	9364

22879	7590	10/03/2005

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EXAMINER
TANG, KAREN C

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
		10/043,924	LUBBERS ET AL.
Office Action Summary		Examiner	Art Unit
		Karen C. Tang	2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *22 October 2001*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-18* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-18* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *22 October 2001* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *10/18/02*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by

Lagueux et al hereinafter Lagueux (US 6,538,669).

1. Referring to Claim 1, Langueux discloses:

a virtualized logical disk object representing a virtual storage container (LUN, refer to Col 7), wherein the virtualized logical disk is an abstract representation of physical storage capacity provided by plurality of physical stores (refer to Col 8, Lines 25-35 and Col 17); and

a virtual disk object representing a virtual storage container, wherein the virtual disk object is an abstract representation of one or more virtualized logical disk object, the virtual disk object including an exposed management interface (refer to Col 2, and Col 7); and

wherein the virtual disk object is managed through the management interface to select (refer to Col 2, Lines 20-67) the one or more logical disk object represented by the virtual disk object (LUN).

2. Referring to Claim 2, Langueux discloses:

a derived disk object coupled to the logical disk object and including methods and data structures configured to add storage protocol to the logical disk object (refer to Col 2 and Col 3, and Col 7).

3. Referring to Claim 3, Langueux discloses:

a presented disk object coupled to the derived disk object and including methods and data structures configured to expose an virtual disk interface to selected clients (Col 15, Col 20 and Col 21).

4. Referring to Claim 4, Langueux discloses:

a network storage controller including a processor and memory, wherein the logical disk object and virtual disk object are implemented in memory of the network storage controller (Col 2, Col 3, Col 7 and 8).

5. Referring to Claim 5, Langueux discloses:

set of persistent objects managed by the network storage controller, wherein the persistent objects represent hardware resource of the network storage system (refer to Col 7).

6. Referring to Claim 6, Langueux discloses:

physical store object representing a physical storage device (refer to Col 8, Lines 15-51); and

a volume object representing storage capacity that can be allocated from the storage device represented by the physical store object, wherein the volume object presents a logical abstraction of the physical store object (refer to Col 7 and Col 8).

7. Referring to Claim 7, Langueux discloses:

a storage cell client object representing a host management agent, wherein the storage cell client object has an interface for coupling to the management interface (refer to Col 6, Lines 59-67 and Col 7).

8. Referring to Claim 8, Langueux discloses:

the storage cell client object is capable of represent a host management agent located in any network coupled computing device (refer to Col Unix, Window, etc, refer to Col 5, support any kind of protocol, refer to Col 7, Lines 10-20).

9. Referring to Claim 9, Langueux discloses:

providing at least one network storage controller (ISAN server, refer to Col 6) coupled to a plurality of physical disk drives (Col 13) implementing physical storage capacity (refer to Col 17)

creating a physical store object representing each of the plurality of physical disk drives (refer to Col 8, Lines 25-35);

specifying at least some of the plurality of physical disk drives for inclusion in a storage cell (refer to Col 15);

creating a storage cell object (storage device, refer to Col 8, and Col 9) representing the storage cell wherein the physical store objects corresponding to the specified physical disk drives are included in the created storage cell (array, refer to Col 9).

10. Referring to Claim 10, Langueux discloses:

obtaining user specifications of a required failure protection level (refer to Col 9, Lines 20-35, and Col 17, Lines 30-60, Col 20 and Col 21); and

obtaining user specifications of a set of physical disk drives (Col 2, Lines 20-45, Col 3).

11. Referring to Claim 11, Langueux discloses

creating a volume record (backup, refer to Col 8, Lines 25-67 and Col 9) on each of the physical disk drives includes in the created storage cell.

12. Referring to Claim 12, Langueux discloses

creating a management logical disk object storing metadata describing the created storage cell object (refer to Col 7, Lines 5-15, Col 8, Lines 25-67 and Col 9, Lines 1-30).

13. Referring to Claim 13, Langueux discloses

verifying that at least four physical store objects were specified before creating the storage cell object (refer to Col 16, Col 17, and Col 18).

14. Referring to Claim 14, Langueux discloses

verifying the sufficient physical store object were specified to satisfy the requested device failure protection level before creating the storage cell object (refer to Col 15, Col 16, and Col 20).

15. Referring to Claim 15, Langueux discloses:

verifying that ports of the network storage controller are operational before creating the store cell object (refer to Col 16).

16. Referring to Claim 16, Langueux discloses:

verifying that all of the selected physical store objects are in an operational condition before creating the storage cell object (refer to Col 16).

17. Referring to Claim 17, Langueux discloses:

connecting a host to a network storage controller (NSC) (server, 1250, refer to Col 21) via a host agent (storage director, refer to Col 21) capable of communicating command-response traffic with logical objects implemented in the network storage controller (refer to Col 21 and Col 22).

creating a logical disk object representing a virtual storage container, wherein the logical disk is an abstract representation of physical storage capacity provided by plurality of physical store (refer to Col 16 and Col 17);

adding a storage protocol to the logical disk object using a derived disk object in response to a user protocol selection (refer to Col 2 and 3);

associating the derived object with a host using a presented disk object referencing the host agent in response to a user host selection (refer to Col 21 and Col 22); and

creating a virtual disk object comprising the logical disk object, the derived disk object and the presented disk object (Table 1, Export table, and Table 2, refer to Col 17 and Col 18).

18. Referring to Claim 18, Langueux discloses

providing the user protocol selection and the user host selection via a management console having a computer interface and communicating the user selection to the host agent (Col 2 and Col 3);

Conclusion

A shortened statutory period for reply to this Office action is set to expire THREE
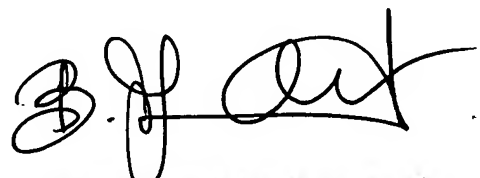
MONTHS from the mailing date of this action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen C. Tang whose telephone number is (571)272-3116. The examiner can normally be reached on M-F 7 - 3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571)272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KT
Karen Tang
9/28/05

BUNJOB JAROENCHONWANIT
PRIMARY EXAMINER